The Anatomy of a Water Quality Listing

- Waterbody Segments: based on Designated Uses of water bodies and WQ standards for individual Uses
- Reaches: based on inherent hydrology
- Assessment Units (AUs): based on reaches with available data
- Water Quality Listings: based on available data for each parameter monitored within a reach

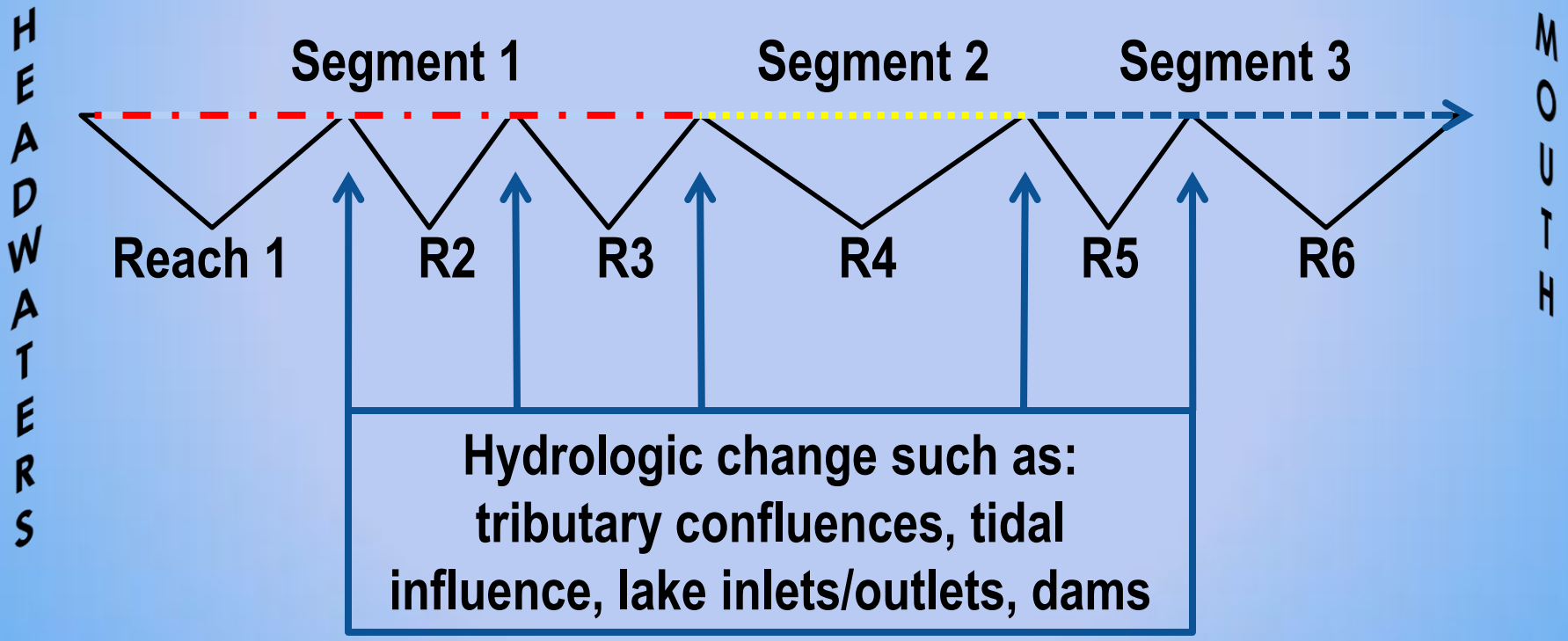
Waterbody Segments Provide the Foundation for the Assessment

"Segment": a section of a waterbody with a unique combination of Designated Uses (& associated WQ standards)

Example of a stream with 3 use-based segments:

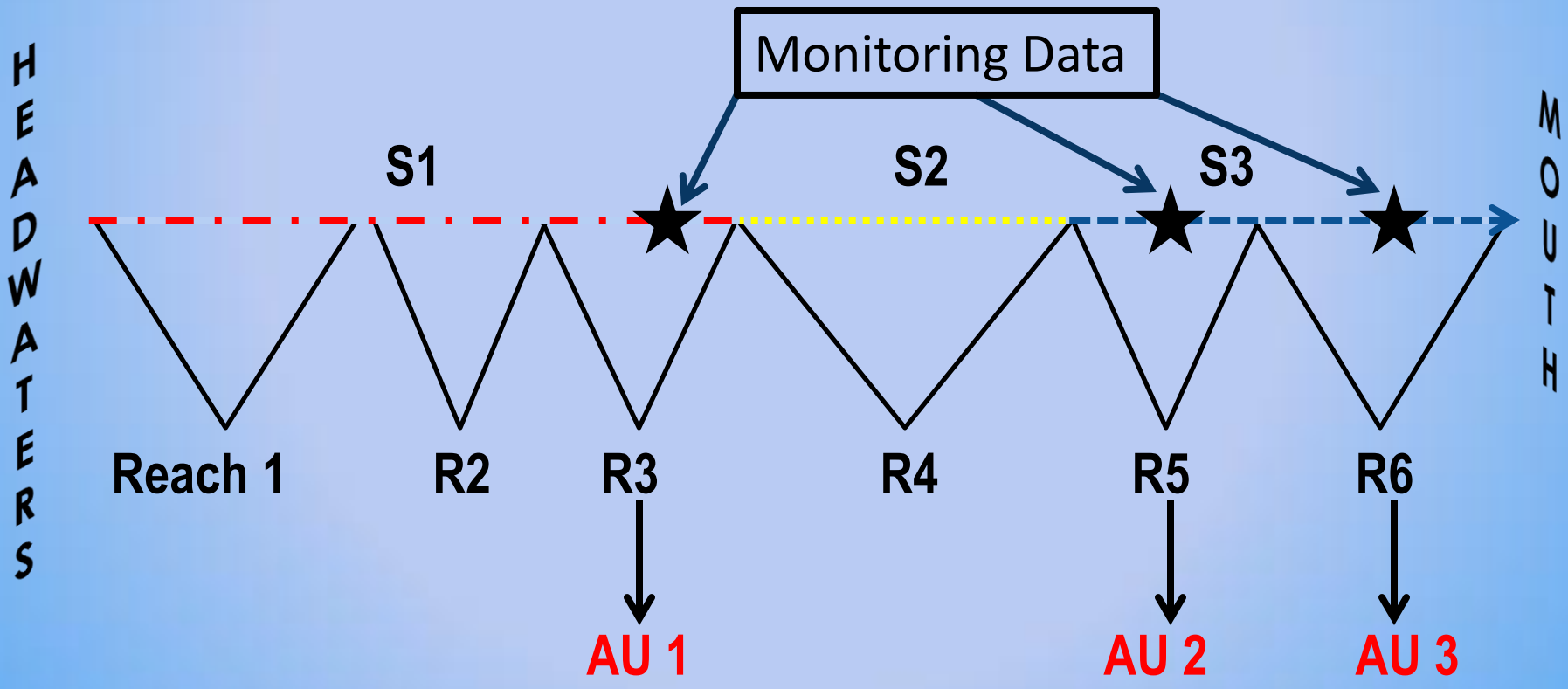
Segments Have One or More Reaches

"Reach": a section of a waterbody that has relatively homogenous chemical and physical attributes



Assessment Units serve as the Framework for Water Quality Listings

"<u>Assessment</u> <u>Unit (AU)</u>": a <u>REACH</u> for which sufficient credible water quality data is available to assess



Each "Listing" is a Unique Combination of a Use/AU/Medium/Parameter

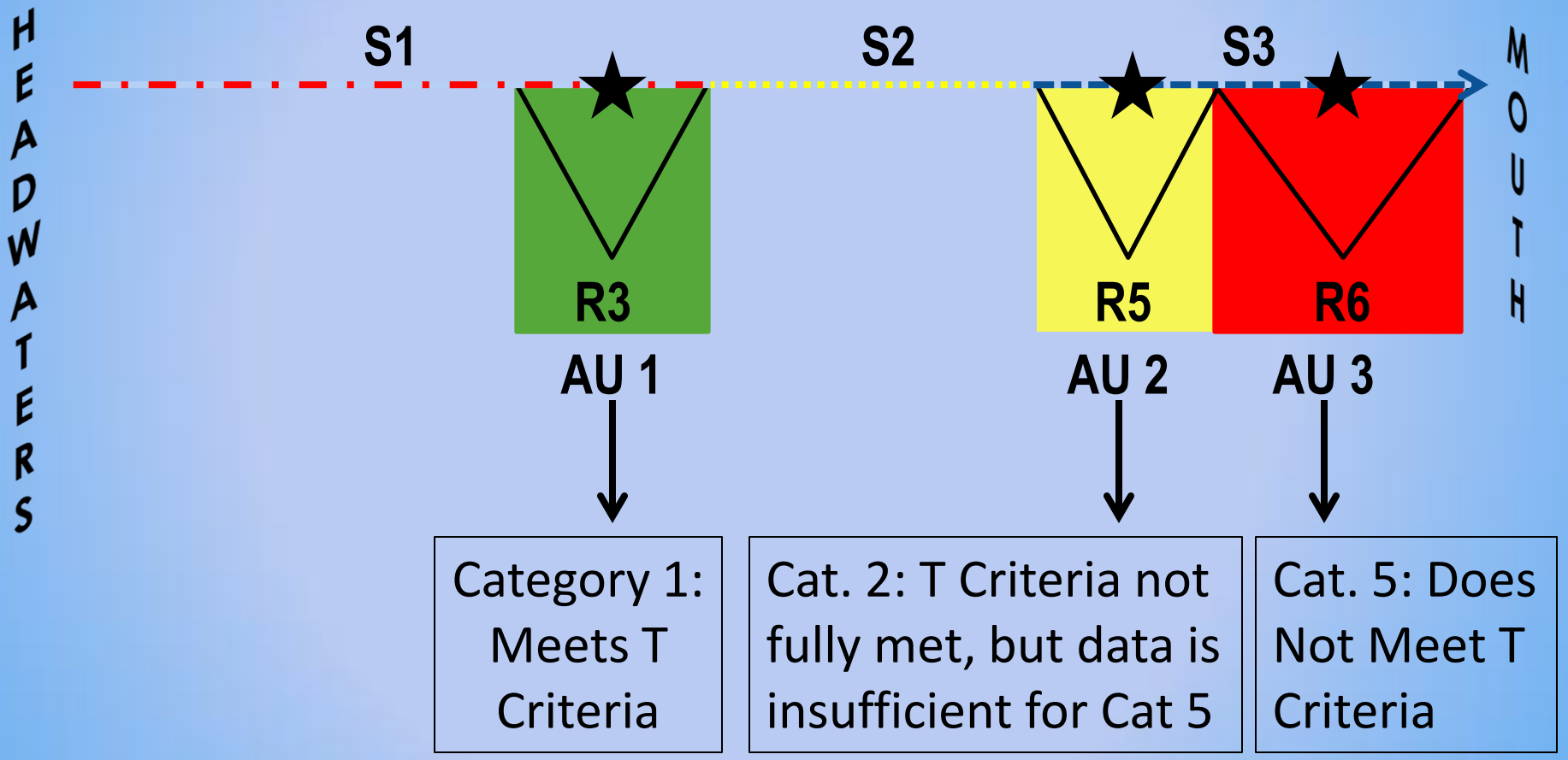
If one or more parameters does not meet water quality standards for a specific Use at any location along an AU, the Use is impaired

Each parameter assessed for a Use results in a unique Listing (and ID#)- no Listing addresses more than one AU

This is why:

- a waterbody can have multiple Listings for the same parameter…
- and each of those Listings can have a different water quality category

Example Layout of Temperature (T) Listings



How AUs were Created on the Current Approved (2012) Assessment

AUs for streams were based on Township, Range, & Section lines

Provided a simple and consistent way to create AUs

Unresponsive to changes in <u>reaches</u>

- Natural changes in water quality & quantity due to tributary inputs
- Changes in human-derived pollutant loads from entering from tributaries

Stream/River AUs in the Proposed Assessment are based on the National Hydrography Dataset

National Hydrography Dataset (NHD): a high-resolution waterbody mapping system, that assigns a numeric *address* to each stream/river reach

AUs based on the NHD aligns the assessment of stream data with reach-scale changes in aquatic ecosystems

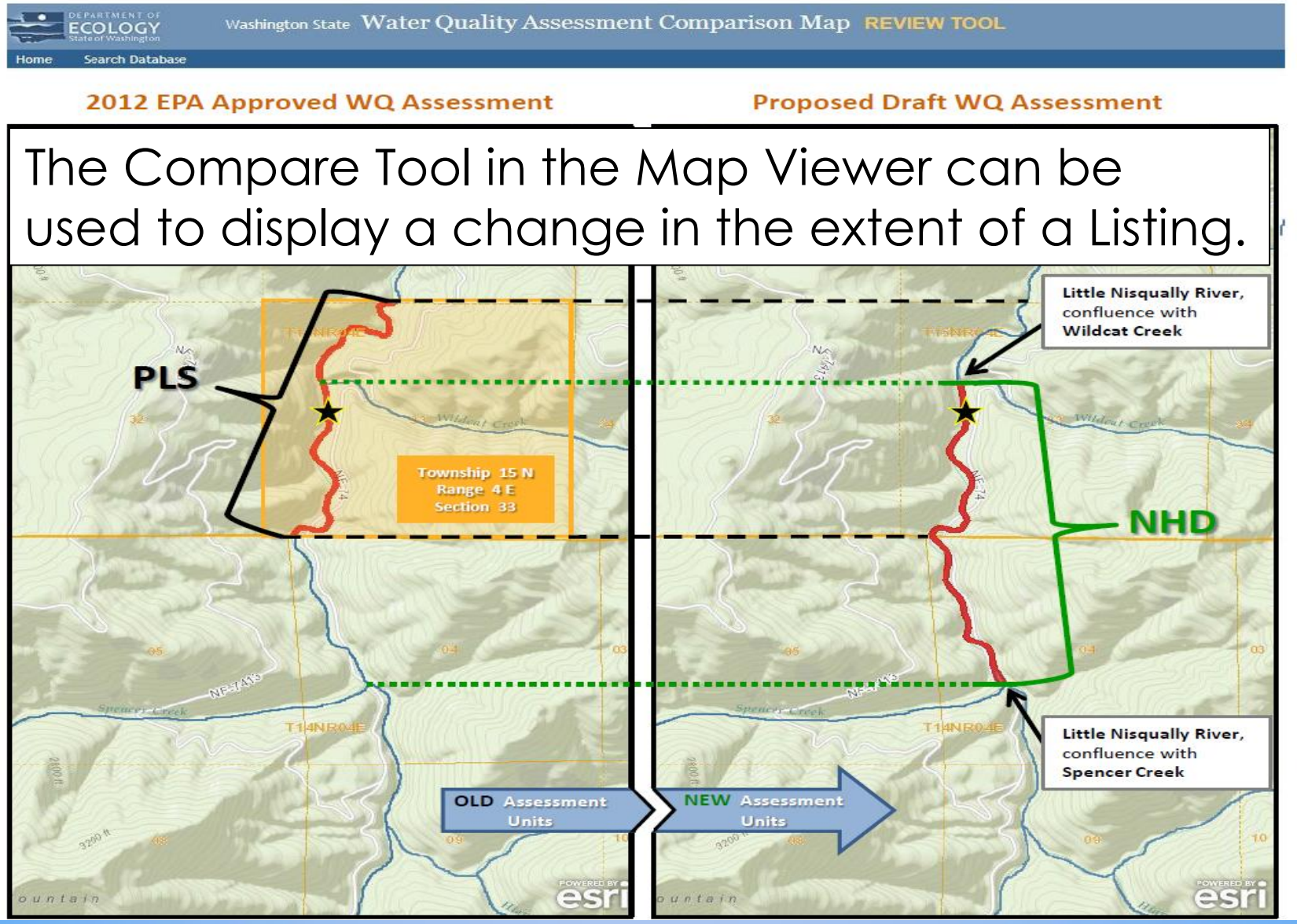
- In general, one AU is equal to one entire reach
- AUs range from a couple hundred feet long to several miles long

How AUs were created using the NHD

AU Delineation:

- **Small streams: full *segment* length**
- **Major streams & rivers: *confluence to confluence***
- **Large rivers: basin boundaries & dams**
- **Small lakes: AU = whole lake**
  - ❖ no change from 2012 Assessment
- **Marine waters & large lakes >1500 acres: grid cells**
  - ❖ no change from 2012 Assessment

AUs for Major Streams/Rivers

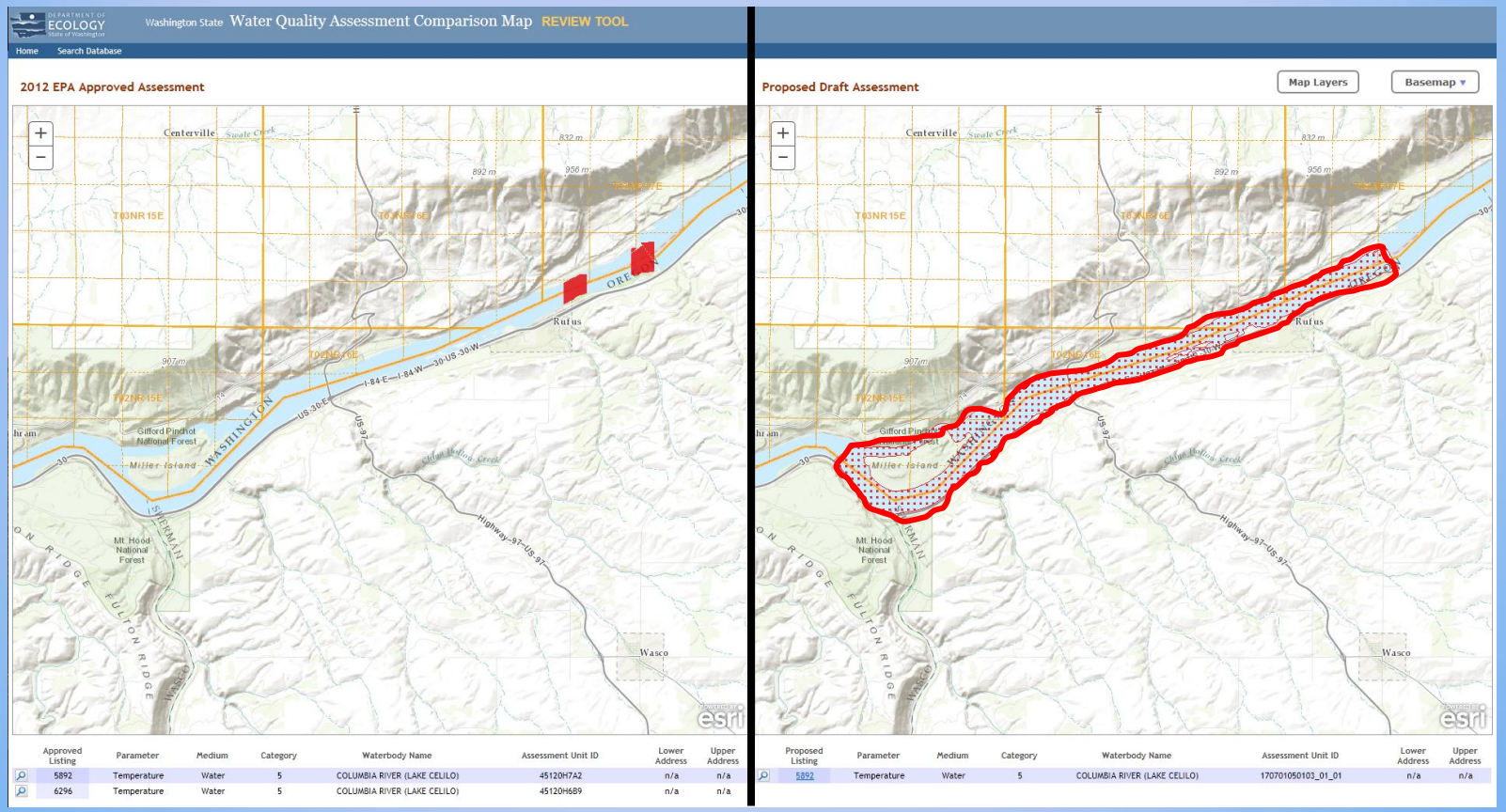


Large River Assessment Units

Columbia River Example

Approved Assessment

Proposed Assessment



Approved Listing	Parameter	Medium	Category	Waterbody Name	Assessment Unit ID	Lower Address	Upper Address
5892	Temperature	Water	5	COLUMBIA RIVER (LAKE CELILO)	45120H7A2	n/a	n/a
6296	Temperature	Water	5	COLUMBIA RIVER (LAKE CELILO)	45120H6B9	n/a	n/a

Proposed Listing	Parameter	Medium	Category	Waterbody Name	Assessment Unit ID	Lower Address	Upper Address
5892	Temperature	Water	5	COLUMBIA RIVER (LAKE CELILO)	170701050103_01_01	n/a	n/a

2012 Assessment Units

Modified Assessment Unit